

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P201316

Luminaire Tested: **4LBLED-LD4-7-SYMF-UNV-L835-CD1-U**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P201316
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P28138)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U
Description: 4 ft. Low Bay Linear, 7000 lm, Frst Sym lens, 3.5K
Light Source: (392) 3500K CCT, 80 CRI LEDS
2UT217098A8354C
Ballast/Driver: OSRAM
(OTI50W01120CC)

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7355.9 lumens
Efficiency: N/A
Efficacy: 147.7 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.99 / 1.87
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.21')
CIE Type: Semi-Direct

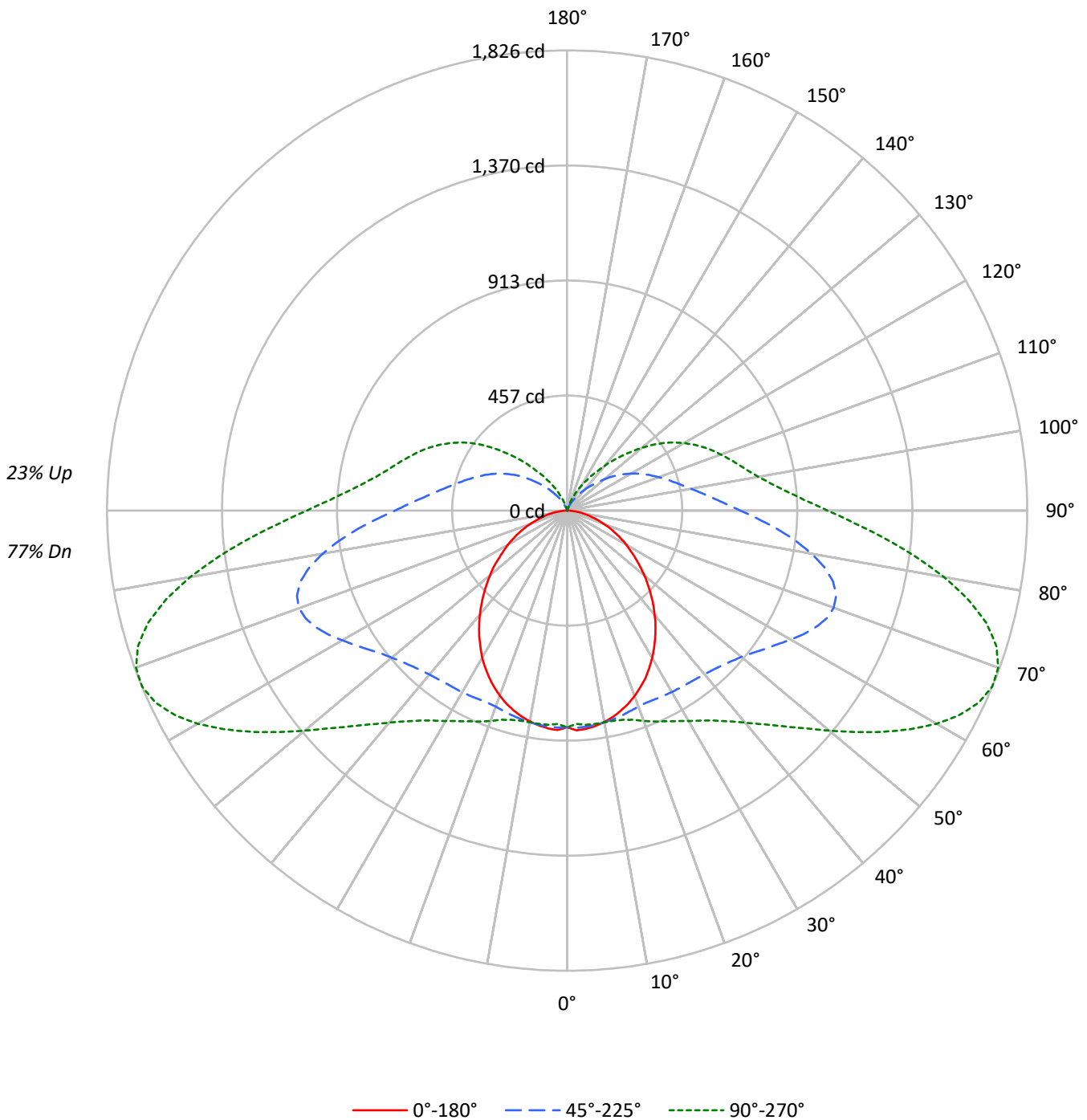
Input Watts (W): 49.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10	0		
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	114	114	114	114	108	108	108	108	98	98	98		89	89	89		81	81	81	77
1	98	91	84	78	92	86	80	75	77	73	68		69	65	62		62	59	56	52
2	86	75	66	59	81	71	63	56	64	57	51		57	51	47		50	46	42	38
3	77	64	54	46	72	61	51	44	54	46	40		48	42	37		43	37	33	29
4	70	55	45	37	65	52	43	36	47	39	32		42	35	30		37	31	27	23
5	63	49	38	31	59	46	37	29	41	33	27		37	30	25		32	27	22	19
6	58	43	33	26	55	41	32	25	37	29	23		33	26	21		29	23	19	16
7	54	39	29	22	50	37	28	21	33	25	20		30	23	18		26	21	16	14
8	50	35	26	19	47	33	25	19	30	22	17		27	20	16		24	18	14	12
9	46	32	23	17	44	30	22	16	27	20	15		25	18	14		22	17	13	10
10	43	29	21	15	41	28	20	15	25	18	14		23	17	12		20	15	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	13848	13848	13848
5°	13999	12443	13968
10°	13803	11445	13772
15°	13523	10749	13503
20°	13171	10479	13149
25°	12750	10376	12696
30°	12195	10431	12184
35°	11570	10684	11546
40°	10902	11293	10852
45°	10175	12270	10146
50°	9435	13701	9407
55°	8690	15470	8672
60°	8015	17270	8033
65°	7262	18721	7282
70°	6464	19397	6464
75°	5501	18980	5469
80°	4429	17465	4386
85°	3038	15339	2899



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.6	1.1
10°-20°	237.3	3.2
20°-30°	381.4	5.2
30°-40°	516.5	7.0
40°-50°	663.5	9.0
50°-60°	853.7	11.6
60°-70°	1044.4	14.2
70°-80°	1055.8	14.4
80°-90°	816.5	11.1
90°-100°	567.3	7.7
100°-110°	423.7	5.8
110°-120°	317.6	4.3
120°-130°	213.8	2.9
130°-140°	117.3	1.6
140°-150°	50.0	0.7
150°-160°	14.3	0.2
160°-170°	1.2	0.0
170°-180°	0.0	0.0
0°-30°	700.4	9.5
0°-40°	1216.8	16.5
0°-60°	2734.0	37.2
0°-90°	5650.8	76.8
90°-120°	1308.5	17.8
90°-150°	1689.6	23.0
90°-180°	1705.0	23.2
0°-180°	7355.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	859	859	859	859	859	
5°	869	861	853	860	868	82
15°	822	841	859	841	821	232
25°	734	826	922	826	731	337
35°	610	837	1017	838	608	381
45°	470	869	1209	872	468	362
55°	332	957	1530	962	332	298
65°	212	1091	1802	1098	212	210
75°	106	1093	1722	1097	105	113
85°	26	836	1264	833	25	29
90°	1	686	1032	683	0	2
95°	1	579	873	576	0	0
105°	1	438	704	438	0	1
115°	1	340	596	340	0	1
125°	1	244	467	243	0	1
135°	1	147	307	146	0	1
145°	1	75	169	72	0	1
155°	1	24	70	22	0	1
165°	1	1	7	3	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4
2.5°	873.1	872.5	868.8	863.1	860.6	860.0	859.4	856.9	856.3	857.5	862.5
5°	869.4	868.8	865.0	859.4	857.5	856.9	856.3	854.4	854.4	856.3	861.3
7.5°	861.9	861.3	857.5	853.1	851.3	850.6	850.6	849.4	849.4	852.5	858.1
10°	851.3	850.6	847.5	843.8	842.5	842.5	842.5	841.9	843.1	846.9	853.1
12.5°	838.8	837.5	835.0	831.9	831.9	831.9	832.5	832.5	834.4	840.7	848.1
15°	821.9	822.5	820.0	817.5	818.8	819.4	820.7	821.9	825.0	832.5	841.3
17.5°	804.4	804.4	802.6	801.3	803.8	805.1	806.9	808.8	814.4	823.8	833.8
20°	782.6	783.2	782.6	783.2	786.3	788.2	790.7	795.1	802.6	815.7	827.5
22.5°	758.8	760.1	760.1	762.6	767.6	770.7	773.8	780.1	790.7	807.5	824.4
25°	734.5	733.9	737.0	741.3	746.3	750.7	754.5	763.8	779.4	801.9	825.7
27.5°	705.1	706.4	710.7	717.0	724.5	730.1	735.7	748.8	771.3	801.3	828.8
30°	675.1	677.0	682.6	691.4	702.0	709.5	715.7	736.4	767.0	801.3	831.3
32.5°	642.7	645.8	653.3	664.5	679.5	688.3	698.3	725.7	763.2	800.1	833.8
35°	609.6	613.3	623.3	637.0	654.5	665.2	680.8	717.6	758.2	798.8	836.9
37.5°	575.8	580.2	591.5	608.9	631.4	647.7	666.4	708.9	754.5	798.8	841.3
40°	540.9	545.9	560.2	580.2	608.9	630.2	652.7	700.1	750.7	799.4	848.1
42.5°	505.3	510.9	528.4	552.1	589.6	614.6	639.5	692.6	748.2	802.6	856.9
45°	469.7	477.2	496.5	525.3	572.1	598.3	627.1	685.8	747.0	808.2	868.8
47.5°	434.1	442.8	465.3	499.6	554.0	585.2	615.2	680.1	748.2	815.7	884.4
50°	399.7	409.7	434.7	476.5	537.1	570.8	603.9	676.4	750.7	826.9	903.1
52.5°	364.7	377.9	405.3	455.9	522.1	557.7	594.6	673.9	755.7	841.9	927.5
55°	332.3	346.0	377.9	435.9	507.8	546.5	585.8	673.3	764.5	860.0	957.4
57.5°	299.2	316.0	351.0	416.6	492.8	535.2	579.0	674.5	775.1	879.4	988.0
60°	271.1	286.0	326.6	397.8	479.7	524.6	572.7	675.8	786.3	901.9	1023.6
62.5°	241.1	257.3	305.4	379.7	466.5	515.3	566.5	677.6	798.2	925.0	1059.9
65°	211.7	228.6	284.2	362.2	453.4	505.3	559.0	677.6	807.5	946.2	1091.1
67.5°	183.6	201.7	262.9	343.5	438.4	492.8	549.6	674.5	813.2	961.2	1115.5
70°	156.8	176.7	242.3	323.5	422.2	477.8	536.5	667.6	812.5	966.8	1126.1
72.5°	129.9	153.0	219.8	303.5	404.7	460.9	520.9	654.5	803.8	959.9	1119.2
75°	105.5	130.5	199.9	283.5	384.7	440.9	501.5	634.5	784.4	938.7	1093.0
77.5°	83.1	110.5	178.6	261.7	362.2	417.8	477.2	608.9	753.8	901.2	1046.8
80°	61.8	92.4	158.6	239.8	337.9	392.2	449.7	576.5	713.9	850.6	984.9
82.5°	43.1	75.6	139.3	218.0	312.9	364.7	419.7	537.7	667.6	791.9	913.7
85°	26.2	60.6	119.9	196.7	287.3	336.0	387.8	497.1	617.1	728.2	835.7
87.5°	11.2	46.8	103.1	176.1	261.7	307.9	355.4	458.4	563.3	662.0	757.6
90°	0.6	35.0	88.1	156.8	237.3	280.4	324.8	417.2	514.0	601.4	686.4
92.5°	0.0	30.0	79.3	144.9	220.5	260.4	301.7	386.6	474.0	552.1	627.7
95°	0.6	25.0	71.8	131.8	203.6	241.7	279.8	359.1	437.8	509.6	579.0
97.5°	0.6	20.6	63.7	119.9	188.0	223.0	258.6	332.3	403.5	471.5	535.9
100°	0.6	16.2	56.2	108.7	171.8	204.2	238.0	307.3	374.1	437.8	498.4
102.5°	0.6	11.9	50.0	98.1	156.8	187.4	218.6	284.2	347.3	408.5	465.9
105°	0.6	8.1	43.7	88.1	143.0	171.8	201.1	262.9	322.9	381.6	437.8
107.5°	0.6	5.6	38.1	78.7	128.0	156.8	184.2	243.0	300.4	357.2	412.2
110°	0.6	5.0	33.1	70.6	116.2	142.4	168.6	224.2	279.2	333.5	387.2



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
112.5°	0.6	4.4	28.1	63.1	104.3	128.0	153.6	206.1	259.8	312.3	363.5
115°	0.6	4.4	23.1	56.2	94.3	115.5	139.3	188.6	239.8	290.4	340.4
117.5°	0.6	4.4	18.7	50.0	84.9	104.3	124.9	172.4	219.8	269.2	317.9
120°	0.6	3.7	15.0	43.7	76.8	94.3	113.7	156.8	200.5	246.7	293.5
122.5°	0.6	3.7	12.5	38.1	68.7	84.9	102.4	140.5	182.4	224.8	268.6
125°	0.6	3.1	10.6	31.9	60.6	76.2	91.8	126.2	164.9	204.2	244.2
127.5°	1.2	3.1	8.7	26.2	52.5	66.2	81.2	112.4	146.1	181.7	219.8
130°	1.2	3.1	7.5	20.0	44.3	56.8	70.0	98.7	129.9	160.5	193.6
132.5°	1.2	2.5	6.9	15.6	36.8	48.1	60.0	85.6	113.0	140.5	169.3
135°	1.2	2.5	5.6	12.5	29.4	39.3	50.6	73.1	97.4	123.0	147.4
137.5°	1.2	1.9	5.0	10.0	22.5	31.9	41.8	61.8	83.1	104.9	127.4
140°	1.2	1.9	4.4	8.1	16.9	23.7	33.1	50.6	69.3	88.7	108.0
142.5°	1.2	1.9	3.7	6.9	13.1	18.1	25.0	41.2	57.5	73.7	90.6
145°	1.2	1.9	3.1	5.6	10.0	13.7	18.1	31.9	46.2	60.6	74.9
147.5°	1.2	1.9	3.1	5.0	8.1	10.6	13.7	23.1	36.2	48.1	60.6
150°	1.2	1.9	2.5	4.4	6.9	8.1	10.0	16.2	26.2	36.8	47.5
152.5°	1.2	1.2	2.5	3.7	5.0	6.2	7.5	11.9	18.1	26.2	35.6
155°	1.2	1.2	1.9	3.1	4.4	5.0	5.6	8.1	11.9	16.9	23.7
157.5°	1.2	1.2	1.9	2.5	3.1	3.7	4.4	5.6	8.1	10.6	14.4
160°	1.2	1.2	1.9	2.5	2.5	3.1	3.1	3.7	5.0	6.2	8.1
162.5°	1.2	1.2	1.9	1.9	1.9	2.5	2.5	2.5	3.1	3.1	3.7
165°	1.2	1.2	1.2	1.9	1.2	1.9	1.2	1.9	1.9	1.2	1.2
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLELD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4
2.5°	864.4	860.0	858.1	855.6	853.8	852.5	850.6	849.4	847.5	847.5	848.1
5°	863.1	858.8	857.5	855.0	853.8	853.1	851.9	852.5	852.5	853.1	852.5
7.5°	860.6	856.9	855.6	854.4	853.1	852.5	851.9	853.1	853.1	853.8	853.8
10°	856.3	853.8	853.8	852.5	851.9	851.3	850.0	851.9	851.9	853.1	852.5
12.5°	851.3	850.6	851.3	851.9	851.9	851.3	850.6	853.1	854.4	854.4	855.0
15°	845.6	846.9	850.0	851.9	853.1	853.1	854.4	856.9	858.8	859.4	859.4
17.5°	841.3	844.4	850.0	855.0	857.5	858.8	861.9	866.9	870.0	870.6	870.6
20°	838.2	845.6	855.6	865.0	868.1	870.6	876.9	883.1	887.5	888.1	888.1
22.5°	840.7	853.1	866.9	877.5	881.9	885.0	891.9	900.0	905.0	905.6	905.6
25°	846.9	861.9	877.5	890.6	895.6	899.4	906.9	915.6	920.6	922.5	921.8
27.5°	852.5	870.6	888.7	903.7	909.4	914.3	923.7	933.7	940.0	941.8	940.6
30°	857.5	878.7	899.4	917.5	925.0	930.6	941.8	953.7	961.8	963.7	961.8
32.5°	862.5	888.1	912.5	933.7	941.2	949.3	963.7	977.4	985.5	988.0	986.8
35°	869.4	899.4	928.1	952.4	962.4	971.8	988.7	1004.9	1014.9	1016.8	1014.9
37.5°	878.7	913.7	945.6	976.2	986.8	999.9	1019.9	1039.3	1051.1	1053.6	1051.1
40°	890.6	931.8	969.3	1004.9	1019.3	1033.0	1057.4	1080.5	1093.6	1098.0	1096.1
42.5°	906.2	954.3	998.0	1040.5	1056.7	1074.2	1103.0	1129.8	1144.8	1149.8	1144.8
45°	925.6	982.4	1033.0	1082.4	1101.1	1122.3	1156.7	1187.3	1204.8	1209.1	1204.8
47.5°	951.2	1015.5	1074.2	1131.1	1153.6	1178.5	1219.1	1254.1	1272.8	1277.8	1273.5
50°	978.7	1055.5	1123.0	1187.9	1216.0	1242.2	1289.7	1328.4	1348.4	1357.8	1349.7
52.5°	1013.0	1099.2	1178.5	1251.0	1284.7	1315.9	1368.4	1410.9	1435.2	1443.3	1432.1
55°	1054.2	1151.7	1240.4	1324.1	1357.8	1392.8	1450.8	1495.8	1521.4	1530.2	1522.0
57.5°	1099.8	1207.3	1305.3	1393.4	1432.7	1468.3	1533.3	1580.1	1602.6	1613.9	1603.9
60°	1147.3	1264.7	1370.9	1464.6	1507.7	1544.5	1610.7	1656.9	1680.7	1691.9	1682.6
62.5°	1193.5	1320.3	1432.1	1529.5	1570.8	1611.4	1677.6	1721.9	1746.3	1756.2	1747.5
65°	1233.5	1367.2	1482.1	1582.6	1625.1	1665.1	1727.5	1770.0	1795.6	1802.5	1796.2
67.5°	1263.5	1399.0	1515.2	1614.5	1655.7	1695.7	1755.0	1794.3	1819.3	1825.6	1820.0
70°	1277.2	1411.5	1526.4	1623.2	1663.8	1699.4	1755.6	1793.1	1816.8	1820.6	1816.2
72.5°	1268.5	1399.0	1510.2	1602.6	1641.3	1672.6	1724.4	1760.0	1782.5	1785.6	1782.5
75°	1236.0	1360.9	1465.8	1552.0	1588.2	1614.5	1663.8	1696.9	1719.4	1721.9	1718.2
77.5°	1181.0	1297.2	1393.4	1476.4	1506.4	1532.0	1578.9	1608.2	1626.3	1630.1	1625.7
80°	1107.3	1214.1	1300.3	1374.6	1403.4	1425.2	1470.8	1502.7	1512.7	1517.7	1511.4
82.5°	1023.0	1118.6	1195.4	1262.9	1288.5	1315.3	1344.7	1374.0	1388.4	1392.8	1387.8
85°	932.5	1017.4	1085.5	1146.1	1168.5	1192.9	1218.5	1247.2	1259.7	1264.1	1259.1
87.5°	841.9	916.8	976.8	1030.5	1051.1	1073.0	1103.6	1118.6	1135.4	1140.4	1134.8
90°	760.7	828.2	881.9	930.6	949.9	969.9	993.7	1012.4	1028.0	1032.4	1027.4
92.5°	695.1	755.7	805.1	848.8	865.6	884.4	907.5	925.6	939.3	943.7	938.7
95°	640.8	696.4	742.6	783.2	799.4	816.9	842.5	856.9	869.4	873.1	869.4
97.5°	594.6	647.0	690.8	730.1	745.7	762.0	786.9	801.3	813.2	816.3	813.2
100°	554.0	605.2	648.3	685.8	701.4	717.0	741.3	755.7	767.0	770.7	767.0
102.5°	520.3	569.6	612.1	650.2	665.2	680.8	703.9	720.7	729.5	733.9	730.1
105°	490.9	539.0	581.5	618.9	634.5	649.5	673.3	688.9	698.9	703.9	699.5
107.5°	464.0	511.5	554.6	590.8	606.4	621.4	645.8	661.4	670.8	676.4	671.4
110°	438.4	485.3	526.5	564.0	579.6	595.2	619.6	635.2	644.5	649.5	645.2



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
112.5°	413.5	459.0	501.5	537.7	552.7	568.3	593.3	609.6	618.3	623.9	618.9
115°	388.5	433.4	474.7	509.6	524.6	540.9	565.2	582.1	591.5	595.8	590.8
117.5°	364.1	407.2	446.6	480.9	495.9	511.5	535.2	552.1	562.1	566.5	561.5
120°	339.1	380.4	419.1	450.3	465.9	480.3	504.6	520.9	530.9	535.2	530.2
122.5°	312.3	352.9	389.7	420.3	435.3	449.1	472.8	489.0	498.4	502.8	498.4
125°	284.8	322.9	358.5	389.1	401.6	414.7	437.8	453.4	463.4	467.2	463.4
127.5°	257.3	292.3	325.4	352.2	366.0	378.5	400.3	415.3	424.1	428.4	425.3
130°	229.8	262.9	292.9	317.3	329.1	341.0	361.0	374.7	383.5	387.2	384.1
132.5°	200.5	232.3	261.7	282.9	294.2	304.2	322.3	334.1	341.6	346.0	342.3
135°	174.3	200.5	228.0	249.8	261.1	269.8	286.0	296.0	302.9	306.7	302.9
137.5°	150.5	173.0	195.5	214.8	225.5	234.8	250.4	259.8	266.1	269.8	266.1
140°	128.7	148.0	168.0	183.6	193.0	200.5	214.8	223.0	228.6	231.7	228.0
142.5°	107.4	124.9	141.8	156.1	164.3	170.5	184.2	190.5	194.9	196.7	194.9
145°	89.3	103.7	118.0	131.2	137.4	142.4	156.1	163.0	166.8	168.6	166.8
147.5°	72.4	84.3	96.2	106.8	112.4	118.7	128.0	136.2	139.3	140.5	139.3
150°	56.8	67.5	76.8	85.6	89.9	94.3	102.4	110.5	113.7	115.5	113.7
152.5°	43.1	51.8	59.3	66.2	70.0	73.7	80.6	88.1	91.2	92.4	91.2
155°	31.2	37.5	44.3	49.3	52.5	55.0	60.0	65.0	70.0	70.0	70.0
157.5°	19.4	24.4	30.0	34.4	36.2	38.7	42.5	46.8	50.6	52.5	52.5
160°	10.0	13.1	16.9	20.0	21.9	23.7	26.2	30.0	32.5	34.4	33.1
162.5°	4.4	5.6	7.5	8.7	10.0	10.6	12.5	14.4	15.6	18.7	16.2
165°	1.2	1.2	1.9	2.5	2.5	2.5	3.1	3.7	4.4	6.9	5.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4
2.5°	849.4	851.3	853.8	855.0	856.9	858.1	861.3	865.0	861.9	857.5	858.1
5°	852.5	851.9	853.8	855.0	856.3	856.9	860.0	863.8	860.0	855.6	855.6
7.5°	853.8	853.1	853.8	854.4	855.0	855.0	858.1	861.3	857.5	851.9	850.6
10°	851.9	851.3	851.9	853.1	853.1	853.1	855.0	857.5	853.1	846.3	843.8
12.5°	853.1	851.3	851.3	851.9	851.9	850.6	851.3	853.1	847.5	840.0	836.3
15°	857.5	854.4	853.1	853.1	851.9	848.8	847.5	847.5	841.3	831.3	826.3
17.5°	868.1	863.1	859.4	857.5	855.0	849.4	845.0	842.5	834.4	823.2	815.0
20°	884.4	877.5	871.9	868.1	865.0	855.0	846.3	839.4	828.2	814.4	803.8
22.5°	900.6	893.1	885.0	881.2	876.9	865.6	853.8	841.9	825.0	806.3	791.9
25°	916.2	908.7	899.4	895.6	890.0	876.9	861.9	848.1	826.3	800.7	780.1
27.5°	934.3	925.0	915.0	909.4	903.1	888.1	871.3	854.4	830.0	800.7	772.0
30°	954.9	943.7	930.6	924.3	916.8	899.4	878.7	858.8	832.5	800.7	767.6
32.5°	978.7	965.6	949.9	941.2	932.5	911.9	887.5	864.4	834.4	800.1	763.8
35°	1006.2	991.2	972.4	962.4	951.8	927.5	898.7	870.6	837.5	799.4	758.8
37.5°	1040.5	1023.0	1000.5	988.0	975.6	946.8	913.7	880.0	842.5	800.1	755.1
40°	1081.7	1061.1	1034.9	1019.3	1004.3	971.2	931.8	891.9	849.4	801.3	751.3
42.5°	1130.4	1105.5	1076.1	1058.0	1040.5	999.3	954.3	906.9	858.8	803.8	749.5
45°	1188.5	1162.3	1124.8	1102.3	1083.0	1034.9	983.0	926.8	872.5	810.0	748.8
47.5°	1255.4	1222.3	1181.7	1155.4	1132.3	1076.7	1016.8	951.8	888.1	818.2	750.1
50°	1330.3	1292.8	1246.0	1218.5	1189.8	1126.1	1056.7	981.2	908.1	830.0	753.2
52.5°	1412.7	1371.5	1320.9	1288.5	1256.6	1182.9	1101.7	1018.6	931.2	845.0	758.8
55°	1498.3	1454.0	1397.8	1362.2	1326.6	1245.4	1154.8	1059.2	961.8	863.8	768.2
57.5°	1581.4	1535.8	1474.0	1437.7	1397.8	1311.6	1211.6	1103.6	994.9	885.6	778.8
60°	1658.2	1612.6	1550.1	1513.3	1469.6	1377.1	1269.7	1152.3	1029.3	908.7	791.3
62.5°	1723.1	1679.4	1617.0	1579.5	1534.5	1439.0	1325.3	1199.8	1066.7	933.1	803.2
65°	1771.2	1730.0	1669.4	1630.7	1587.6	1488.3	1372.1	1241.6	1098.0	954.3	813.8
67.5°	1795.6	1756.9	1698.2	1661.3	1618.8	1520.2	1404.0	1269.7	1121.7	969.3	820.7
70°	1793.1	1756.2	1701.3	1665.1	1624.5	1529.5	1415.2	1281.0	1132.3	974.9	819.4
72.5°	1760.6	1723.8	1674.4	1639.5	1600.7	1512.0	1399.6	1271.0	1124.2	966.2	809.4
75°	1696.3	1662.6	1612.6	1583.9	1548.9	1466.5	1359.0	1234.1	1096.7	943.1	788.8
77.5°	1603.9	1578.3	1529.5	1502.7	1468.3	1392.1	1291.0	1178.5	1048.6	904.4	757.0
80°	1490.8	1469.6	1422.1	1398.4	1364.7	1298.5	1211.0	1102.3	984.9	851.9	715.7
82.5°	1367.2	1342.8	1305.3	1283.5	1251.6	1192.3	1109.2	1020.5	911.2	791.9	667.6
85°	1239.1	1216.6	1182.3	1163.5	1135.4	1082.4	1008.0	930.0	833.2	725.7	615.8
87.5°	1117.3	1095.5	1063.0	1046.1	1020.5	973.1	908.1	839.4	753.8	662.0	560.9
90°	1011.8	991.2	960.6	945.0	921.8	878.7	820.0	758.2	682.6	598.3	511.5
92.5°	925.0	906.2	877.5	862.5	841.9	802.6	749.5	693.3	625.2	552.1	471.5
95°	856.3	838.2	812.5	798.2	778.8	738.2	691.4	638.9	576.5	509.6	435.3
97.5°	800.7	785.7	757.6	743.8	728.2	687.0	644.5	592.7	534.6	472.2	402.8
100°	755.7	738.8	713.2	700.1	683.9	645.2	602.1	553.4	497.1	437.8	373.5
102.5°	720.7	703.2	679.5	664.5	648.9	609.6	567.1	519.6	465.9	408.5	346.6
105°	689.5	672.6	648.9	633.9	618.3	579.6	539.0	490.9	437.8	382.2	322.3
107.5°	660.2	645.2	621.4	606.4	590.8	552.1	511.5	464.0	412.2	357.9	299.8
110°	635.2	618.9	594.0	579.6	562.7	525.9	485.3	439.1	387.2	334.1	278.6



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
112.5°	610.2	592.7	567.7	553.4	536.5	499.6	459.7	414.1	363.5	312.3	258.6
115°	582.7	565.8	539.6	525.3	508.4	472.2	433.4	389.1	340.4	290.4	238.6
117.5°	553.4	536.5	510.3	496.5	480.3	444.7	407.8	364.7	317.3	269.2	218.6
120°	521.5	505.3	480.3	466.5	450.9	416.6	381.0	337.9	292.9	246.7	199.9
122.5°	489.0	473.4	449.1	435.3	420.3	387.8	352.9	311.0	267.9	224.8	181.7
125°	454.1	438.4	415.3	402.2	387.2	356.0	322.3	282.9	243.0	204.2	163.0
127.5°	413.5	401.0	378.5	365.4	351.6	324.1	291.7	256.1	219.2	181.7	144.9
130°	374.7	361.6	340.4	328.5	316.6	291.7	262.9	228.6	192.4	159.9	126.8
132.5°	334.1	322.3	304.2	294.2	283.5	261.1	231.7	198.0	167.4	139.3	109.9
135°	296.0	286.0	269.8	261.1	250.4	226.7	199.2	171.1	145.5	120.5	94.3
137.5°	260.4	250.4	235.5	226.1	214.8	193.6	171.1	148.0	124.3	103.1	79.9
140°	223.0	214.8	201.1	193.0	183.0	164.9	146.1	124.3	105.5	86.2	66.2
142.5°	191.1	184.2	170.5	163.0	154.3	139.3	121.8	104.9	88.1	71.2	54.3
145°	163.6	156.8	141.8	136.2	128.0	114.9	100.6	85.6	71.8	57.5	43.7
147.5°	136.8	128.7	115.5	110.5	104.3	93.1	81.8	70.0	58.1	45.6	33.7
150°	111.8	102.4	91.8	88.7	82.4	73.7	64.3	54.3	45.0	35.0	24.4
152.5°	88.1	79.9	71.2	68.1	63.1	57.5	49.3	41.2	33.7	24.4	16.9
155°	65.6	59.3	52.5	50.6	46.8	42.5	35.6	29.4	22.5	16.2	11.9
157.5°	46.2	41.2	36.2	35.0	32.5	28.7	23.1	18.1	14.4	10.6	8.1
160°	28.7	25.6	21.9	20.6	18.7	16.2	12.5	10.6	8.7	6.9	5.0
162.5°	13.7	11.9	10.6	10.0	8.7	7.5	6.9	5.6	5.0	4.4	3.7
165°	5.0	5.0	5.0	4.4	4.4	4.4	4.4	3.7	3.1	3.1	2.5
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	859.4	859.4	859.4	859.4	859.4	859.4	859.4	859.4
2.5°	858.8	860.0	860.0	860.6	862.5	866.3	871.3	871.9
5°	856.3	856.9	856.9	856.9	858.8	861.9	866.9	867.5
7.5°	850.6	850.6	850.6	850.6	852.5	855.0	859.4	860.0
10°	843.1	842.5	842.5	841.9	843.1	845.0	850.0	849.4
12.5°	833.8	832.5	831.9	831.9	831.3	833.2	836.3	836.9
15°	823.2	820.7	819.4	818.2	817.5	817.5	821.3	820.7
17.5°	810.7	806.9	805.1	803.2	800.7	800.7	803.2	802.6
20°	796.3	791.3	788.2	785.7	781.9	780.7	781.9	781.3
22.5°	781.9	773.8	770.7	767.0	761.3	758.8	758.2	757.6
25°	765.1	755.1	750.7	747.0	738.8	735.7	732.6	731.4
27.5°	750.1	735.7	730.1	723.9	714.5	710.1	705.1	703.9
30°	737.0	715.7	707.0	700.8	688.9	682.0	675.8	674.5
32.5°	727.0	697.6	685.8	678.3	662.0	652.7	644.5	640.8
35°	718.2	680.8	665.2	653.3	633.9	622.7	611.4	608.3
37.5°	710.1	666.4	645.8	629.6	607.7	591.5	579.0	574.0
40°	702.0	653.3	628.3	607.7	579.0	560.2	544.6	538.4
42.5°	694.5	640.2	613.3	588.3	550.9	528.4	511.5	502.8
45°	687.6	628.3	598.9	571.5	523.4	497.1	476.5	468.4
47.5°	682.6	617.1	584.6	554.6	497.8	465.3	444.1	433.4
50°	678.9	606.4	570.8	537.7	475.3	434.7	411.0	398.5
52.5°	677.0	597.1	558.4	522.8	454.7	405.3	377.2	367.9
55°	677.6	589.6	547.7	509.0	435.3	377.2	346.0	331.6
57.5°	678.9	582.7	537.1	495.3	416.0	349.8	314.8	299.8
60°	681.4	577.1	527.7	482.2	397.8	326.0	286.0	271.7
62.5°	683.9	572.1	518.4	469.7	380.4	304.2	257.3	241.1
65°	684.5	564.6	508.4	457.2	362.9	282.3	228.0	212.3
67.5°	682.0	555.2	495.9	442.8	344.8	261.1	200.5	184.2
70°	674.5	542.7	481.5	426.6	324.8	240.5	174.3	156.8
72.5°	660.8	526.5	464.7	408.5	305.4	218.6	150.5	129.3
75°	641.4	506.5	444.7	387.8	284.8	198.0	128.7	104.9
77.5°	615.2	480.9	421.0	364.7	262.3	176.7	109.9	82.4
80°	581.5	454.1	394.7	339.8	240.5	157.4	91.8	61.2
82.5°	541.5	423.4	366.6	314.2	219.8	137.4	74.9	42.5
85°	500.3	390.3	337.3	287.3	198.0	118.7	60.6	25.0
87.5°	459.7	357.2	309.2	262.9	175.5	101.8	46.8	10.0
90°	419.7	325.4	279.8	236.7	156.1	86.2	35.0	0.0
92.5°	386.6	301.7	260.4	219.2	143.6	78.1	30.0	0.0
95°	357.2	279.2	239.8	201.7	130.5	70.6	25.0	0.0
97.5°	330.4	257.9	221.7	185.5	118.7	62.5	20.6	0.0
100°	304.8	236.7	203.0	170.5	107.4	55.6	15.6	0.0
102.5°	282.3	218.0	186.1	154.3	96.2	48.7	11.2	0.0
105°	260.4	199.9	170.5	139.9	86.2	42.5	6.9	0.0
107.5°	241.1	183.0	154.9	126.8	76.8	36.8	4.4	0.0
110°	222.3	167.4	139.9	114.3	68.7	31.9	3.7	0.0



TEST NUMBER: P201316

CATALOG NUMBER: 4LBLED-LD4-7-SYMF-UNV-L835-CD1-U

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
112.5°	204.9	152.4	126.8	102.4	61.8	26.9	3.7	0.0
115°	186.7	138.0	114.3	92.4	55.0	21.9	3.1	0.0
117.5°	171.1	124.3	103.1	84.3	48.1	17.5	3.1	0.0
120°	155.5	112.4	93.7	75.6	41.8	13.1	3.1	0.0
122.5°	139.9	101.8	83.7	67.5	36.2	10.6	2.5	0.0
125°	125.5	90.6	74.3	58.7	30.0	9.4	2.5	0.0
127.5°	111.2	79.3	64.3	50.6	23.7	8.1	1.9	0.0
130°	96.8	68.1	55.0	42.5	18.1	6.9	1.9	0.0
132.5°	83.7	57.5	46.2	35.0	14.4	5.6	1.2	0.0
135°	70.6	48.1	38.1	27.5	11.2	5.0	1.2	0.0
137.5°	59.3	39.3	30.0	20.6	9.4	3.7	1.2	0.0
140°	48.7	31.2	22.5	15.6	7.5	3.1	0.6	0.0
142.5°	38.7	23.1	16.9	11.9	6.2	2.5	0.6	0.0
145°	30.0	16.9	12.5	9.4	5.6	1.9	0.6	0.0
147.5°	21.9	13.1	10.0	8.1	4.4	1.9	0.6	0.0
150°	15.6	10.0	8.1	6.2	3.1	1.2	0.6	0.0
152.5°	11.9	7.5	6.2	5.0	2.5	1.2	0.6	0.0
155°	8.7	5.6	5.0	3.7	1.9	1.2	0.6	0.0
157.5°	6.2	4.4	3.7	2.5	1.9	1.2	0.6	0.0
160°	3.7	3.1	2.5	1.9	1.2	0.6	0.6	0.0
162.5°	3.1	1.9	1.9	1.9	1.2	0.6	0.6	0.0
165°	1.9	1.2	1.2	1.2	0.6	0.6	0.6	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)